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A NEW HEBREW PRESS

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FOR A NUMBER OF YEARS there has been an increasing demand for Hebrew printing in America principally due to the great increase of the Jewish population. This demand for ordinary purposes has been met by an increase in the amount of hand type in various printing offices and more especially by the creation of linotype machines with Hebrew faces. These latter are without vowel points. They involve in addition the difficulty inherent in the breaking up of an entire line in the case of a single error with all the probabilities of the introduction of fresh errors upon resetting.

Owing to the limited quantity of hand-type, books of any length are usually set up in a single sheet or at best in a few sheets at a time and then either printed off or stereotyped making corrections impossible as the work proceeds.

As is well known Hebrew printing in quantity required for American books and journals was frequently done in Germany, England or Holland. I had felt for some time that this practice was undesirable and reduced Hebrew publication in America to a provincial status.

Some years ago the Jewish Publication Society of America undertook the publication of a series of Jewish Classics (Text and Translation) in twenty-five volumes, and this undertaking together with the interruption of mail facilities due to the war emphasized the need for a Hebrew Press.

Through the generosity of the late Jacob H. Schiff, Louis Marshall, Esq., and a number of other gentlemen in New York, Philadelphia and Baltimore a fund was placed at the disposal of the Publication Society for the creation of a Hebrew Press.

After fully considering the subject it was decided to adopt the monotype system. This system, which first came into use in 1899, not only makes type but also sets it in lines justified more accurately than can be done by hand. It is a combination of a type-caster and a type-setting machine equipped with an automatic justifying mechanism. Each monotype character is on a separate body so that corrections and alterations are made as readily as with hand-set type.

In the monotype system two machines are used: a paper perforator and a type-caster. The keyboard, or perforator, produces a ribbon of paper which controls, by means of the perforations, the casting machine just as a paper roll controls an automatic player piano. The keyboard, which is not unlike a typewriter (its key arrangement is the universal typewriter keyboard), consists of a punching and counting mechanism. When a key is depressed the punches for this character perforate the paper and at the same time the width of this character is registered by the counting mechanism; the paper ribbon (about four and one-half inches wide) then automatically advances to receive the record of the next key struck. As in a typewriter, a bell signals the operator to end the line, and when this is done, a scale indicates the keys to be struck to justify the completed line. No calculation whatever is required, for the counting mechanism not only determines the amount the line is short of the required measure, but it also divides this by the number of spaces in the line and indicates the keys to strike to produce the proper size spaces to make this line the correct length. When the ribbon unwinds at the caster, the first perforations for the line are these justifying perforations, which cause the caster to adjust its space-sizing mechanism to produce the proper size spaces for the line.

The Duplex Keyboard is a further development of the Monotype; it introduces a new process to the printing industry. It is like the ordinary monotype keyboard except that it is equipped with two perforating and counting mechanisms and consequently simultaneously produces two different paper ribbons for quite independent type sizes and width lines. With this keyboard an article may be set in 10 point for a magazine while at the same time the same matter is produced in 12 point for publication in book form. Either set of perforating and counting mechanisms may also be used independently of the other set. This matter of different point sizes may be alternated, each on its own ribbon; for example, the text of a book in large type and the footnotes in a smaller type.

The Casting Machine is a complete type-foundry, making type, borders, quads and spaces in all sizes from 5 to 36 point inclusive. This type may be put in cases and set by hand like foundry type, or, when the caster is controlled by a ribbon perforated by the keyboard, the type in any sizes from 5 to 14 point is delivered, in any measure required, up to 60 picas, upon ordinary galleys in

perfectly justified lines. In short, its product is exactly the same as hand-set foundry type and is handled, corrected, and made up in the same way.

Under this general plan two machines have been built to produce Hebrew composition. The keyboard has been provided with keys bearing the Hebrew characters. This was done by exchanging the complete keybanks, key-bars and stop-bars, substituting those carrying the Hebrew characters for the ones with the English characters. The paper ribbon is perforated exactly the same as it would be for English composition. In setting Hebrew composition the characters are set in one line and the vowel points and accents are set in the following line so that they come directly above or below the characters which they affect.

The composition with vowel points required the adoption of an ingenious standardization system which not only constitutes an original contribution to the art of Hebrew printing, but its principles may be applied to other Oriental languages. The set size of the characters or their widths has been standardized into two units: eighteen and nine. English characters have widths ranging to twelve units. Thus—the wide characters like *aleph*, *he*, *mem*, *šade* are arranged in eighteen unit set sizes, while the narrow characters like *nun*, *wau*, *gimel*, are set in nine units. The vowel points have also been standardized to match the eighteen unit characters and another set of vowel points for the nine units. The reducing of the set size to a two unit system, eighteen and nine, eliminates all the possible difficulties which a compositor would otherwise have if he had to match as in English a larger variety of units.

The Hebrew matrix case consists of about 225 characters and includes in addition to all the letters of the alphabet those characters which carry the *dagesh* and *holem*, so that they may be set with one touch. The matrix case also contains the superior characters, the numbers, vowel points, musical accents, and the punctuation marks. Thus all conceivable kinds of Hebrew composition, straight matter, table work, composition with or without vowel points, notes, may be set using but one matrix and on the same keyboard. It will be possible to set scientific articles which require a mixture of English and Hebrew, and all sorts of faces, without making any insertions by hand. The convenience of this can be readily seen when setting glossaries, dictionaries, encyclopedic articles, indexes; in short, wherever several languages

or variations of style of type are required. As many as six different faces of type may be set on one line. The principal change in the mechanism is at the Casting Machine where the type is produced. The matrices of each character are placed in the matrix case upside down. In addition to turning the characters around, the lines as they come out of the machine are assembled in the reverse order from English composition. That is—instead of the lines as they come out being pushed onto a galley or tray toward the right they are pushed toward the left. This combination of turning the characters around and assembling the lines in the reverse order makes the Hebrew composition read from right to left instead of from left to right as in English.

The lay-out of the keyboard could not follow any older system, but was so arranged as to produce the maximum speed and convenience for the compositor.

A work under this plan is always printed from new type. The cost of electrotyping is unnecessary as the paper rolls can be stored away in a small space and new castings made from them if a new edition is required. The space for storing electrotypes is also saved.

In the matter of the economy of time it can be stated that the Jewish Publication Society is employing a skilled type-setter from Wilna who formerly worked for the Romm firm of that city, which published the great Talmud. This man, though a novice on the Monotype machine, nevertheless has set up a galley of Hebrew type with vowels on the machine in forty-five minutes as against four hundred and fifty minutes by hand.

It may fairly be said that a revolution in Hebrew printing has thus been effected. The Jewish Publication Society of America may lay claim to having adapted the Monotype system to the full use of Hebrew composition. It has not only initiated the idea but its special committees on Hebrew printing have contributed nearly all the ideas which have enabled the producers of the machine to utilize it for the purposes of Hebrew printing.

As for the face itself, a word should be said. The original effort was to maintain a tradition of the Hebrew printing as known in America. Faces of early Hebrew type vary, of course, very greatly in Turkey, Italy, Germany, Poland, Russia, Holland and England. In some cases they obviously imitate a local manuscript style. A study of early Hebrew printing in America and especially of works of considerable length made it plain that

the American types were descended from Holland which in its turn seems to have gone back to Venice. Accordingly, some prints were taken of works published by the distinguished Manasseh Ben Israel (1604–1657) who was at once author, printer, and statesman and whose features are known to us by a splendid etching of Rembrandt. From these characters an artist drew the designs for the Monotype machine. These were carefully studied and slight alterations made to prevent possible confusion of letters like *daleth* and *resh*, *gimel* and *nun*, *samech* and final *mem*. A face was thus finally secured which it is believed combines beauty with clearness. The machines are being constructed to carry six sizes of type.

Aside from presenting this statement my purpose in bringing the subject before the Society is to enable the members to consider whether the Society desires to supplement this enterprise.

The Jewish Publication Society has expended some \$14,000 up to now in building two machines carrying six sizes of type. Hebrew is ample for its purpose. I have ascertained that for a maximum cost of \$500 per language any other alphabet which would lend itself to the Monotype system could be added.

This press, which I hope will be ready for practical purposes by the end of May, will be at the service of anyone up to its capacity. Being operated by a Society which does not seek profits, it may aid in solving some of the financial questions connected with the printing of Hebrew and other Oriental texts in America.

March 29, 1921